

Appl. No.10/765,752
Reply to Office Action of June 12, 2007
Amendment dated July 26, 2007

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REMARKS

Claims 29 - 30 have been added in order to alternately define the invention as disclosed in the specification.

Applicants respectfully request reconsideration of the Examiner's rejection of claims 20 – 23 under 35 U.S.C. §112. Applicants have amended claims 22 and 23 in order to clarify that the lack of light blocking or light-redirecting material is only within the portion of the geometric diffusion range of the light emitted from the light emitting element between the light emitting element and the light receiving element. Clearly, as shown in Fig. 3, the submount 6 is outside of the geometric diffusion range of the light. As further disclosed in Fig. 3 and on pages 9 – 10 of the specification, the currently claimed invention relies upon the positioning of the light receptor alone (outside of the maximum diffusion range of the light emitting element) in order to avoid directly impinging light upon the photoreceptor. Accordingly, and as clearly disclosed in the Figures and specification, Applicant's invention achieves the goal of preventing the impingement of light without the use of light-blocking or light-redirecting materials being placed within the portion of the geometric diffusion range of the light emitted from the light-emitting element between the light emitting element and the photoreceptor. For example, in *Cooper Cameron*, the CAFC stated that "In *Vas-Cath*, we held that "under proper circumstances, drawings alone may provide a 'written description' of an invention as required by § 112. Drawings constitute an adequate description if they describe what is claimed and convey to those of skill in the art that the patentee actually

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invented what is claimed." *Cooper Cameron Corp. v. Kvaerner Oilfield Prods.*, 291 F.3d 1317, 1322 (Fed. Cir. 2002), internal citations omitted.

In light of the forgoing, Applicants respectfully request that the rejection under 35 U.S.C. §112 be withdrawn, and claims 20 – 23 placed into condition for allowance.

Applicants respectfully request reconsideration of the Examiner's rejection of claims 12 – 28 under 35 U.S.C. §103(a). The Examiner has rejected these claims in view of the cited references of *Zhou et al.* (U.S. Patent No. 6,205,274) in view of *Winzer* (U.S. Patent No. 4,540,237). The *Zhou* reference is directed to an optical head for coupling an edge emitter light source to an optical fiber (See the abstract of the invention). Figure 7, to which the Examiner cites, discloses a bidirectional communications system, including a light source 102 at an angled end 101A of an optical fiber 101. The end face of the fiber includes a partially reflective surface 105 between the fiber end 101A and a prism 104. "Light from the laser travels through the bottom surface of the optical fiber until the light impinges upon the inner side of the coated face of the fiber. Although the coating reflects most of the light along the longitudinal axis of the fiber, a small portion of the light transmits through the coating and into a transfer medium such as a glass prism. The medium transfers the light to a detector that suitably measures the intensity of the light and develops an output signal." (See Column 3, lines 8 – 14, emphasis added).

At no point, however, does *Zhou* teach or suggest the limitation wherein "said photoreceptor element is arranged outside a maximum diffusion range of the light emitted from said light-emitting element" as required by the claims. On page 2 of the Examiner's January 9, 2006 Office Action, the Examiner states that "*Zhou* is silent on how light diffuses from the light source 102."

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In recognition of this deficiency, the Examiner appears to take Official Notice that it would have been obvious to do so, as the Examiner has failed to support the assertions made at the bottom of page 3 to the top of page 4 of the last Office Action with any evidence or citation to the reference. For example, the Examiner states that "Since the light detector 118 needs to be placed outside the maximum transmission range of the light source 102 for this invention to function properly and as designed, it would have been immediately obvious to one of ordinary skill in the art to ensure so in order to prevent cross-talking [sic]." (See page 4 of the Office Action). The Examiner fails to cite any evidence to support this assertion. Applicants respectfully disagree with the Examiner's contention, and submit that at least two alternative explanations are just as plausible as the Examiner's. For example, it could be that the *Zhou* device only transmits or receives data at separate points in time, so that there is no need to worry about whether or not the light detector 118 is outside of the maximum diffusion range of the light source 102. Alternately, because the light source is being driven with known data, it is possible that a reception circuit can subtract out the known signal detected by the light detector 118 that originates from the light source 102 in order to derive a separate received signal.

In regard to the Examiner's recitation of language from the *Zhou* reference that "most of the light from the light source 102 is reflected into the fiber 101 ... [while] the rest [] is transmitted ... to the monitor 103," Applicants submit that in light of Column 3, lines 8 – 14, this disclosure merely discloses that of the light impinging upon the coating 5, some is reflected into the fiber, and some is transmitted to the monitor 103. Nothing in this language can be construed by the Examiner to mean that all of the light

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from the light source is either reflected into the fiber 101 or is transmitted to the monitor 103.

In any event, Applicants submit that the Examiner cannot rely upon possibilities or probabilities. The *Zhou* reference absolutely fails to make any disclosure regarding the diffusion range of the light source 102, and the advantages of placing the detector outside of the maximum diffusion range of the light source.

Moving on to the next limitation, the optical fiber "having a non-angular portion," the Examiner cites to the newly cited *Winzer* reference as disclosing such a structure in FIGURE.

First and foremost, Applicants submit that *Winzer* is non-analogous art. *Winzer* is directed to a coupling element for coupling light from respective input and output optical fibers into a main optical fiber. *Winzer's* disclosure spends significant time explaining the ideal numerical aperture relationships between the input, output, and main optical fibers, the ideal diameter relationships between the input, output, and main optical fibers, and the ideal angle requirements between the interfaces of the input, output, and main optical fibers. (See Column 2, lines 44 – Column 3, line 10).

Applicant's invention, in contrast, is directed to a structure in which a light emitter is placed immediately adjacent the fiber and emits *directly* into the fiber, and in which a light receiver is placed immediately adjacent the fiber and receives radiation *directly* from the fiber, without any further intervening optical fibers. Applicants submit that one of ordinary skill in the art of optical design of these direct radiation structures would not look to coupling element structures as disclosed in *Winzer* in order to solve

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outstanding problems in the art of optical communication devices involving the direct injection and reception of light into and out of a single main fiber.

Applicants note that, in the *Deminski* case, the CAFC held that "The determination that a reference is from a non-analogous art is therefore two-fold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved." *In re Deminski*, 796 F.2d 436, 442 (Fed. Cir. 1986). A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

In *Wang Laboratories*, the Federal Circuit held considered the issue of whether a single in-line memory modules ("SIMMs") having eight word data storage chips capable of storing 8-bit words (bytes) and a ninth parity bit chip packaged in plastic leaded chip carriers ("PLCCs") is "in the same field of endeavor" as that of the newly asserted Allen-Bradley patent (the " '392") and its commercial counterpart (the "X9 SIMM"). The '392 patent disclosed a SIMM with nine memory chips (8 data, 1 error detection) mounted in a single row. Allen-Bradley sold the X9 SIMM in a programmable controller consisting of chips encapsulated in ceramic dual in-line packages mounted on an epoxy-glass printed circuit board substrate. The CAFC held that "The Allen-Bradley art is not in the same field of endeavor as the claimed subject matter merely because it relates to memories. It involves memory circuits in which modules of varying sizes may be added or replaced; in

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contrast, the subject patents teach compact modular memories." *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

In regard to the second prong of the analogous / non-analogous test set forth in *Deminski*, the CAFC found that "Wang's SIMMs were designed to provide compact computer memory with minimum size, low cost, easy repairability, and easy expandability. ... In contrast, the Allen-Bradley patent relates to a memory circuit for a larger, more costly industrial controller. SRAMs were used by Allen-Bradley because of their intended industrial environment. According to Dr. Frey, size was not a consideration in the Allen-Bradley work. Thus, there is substantial evidence in the record to support a finding that the Allen-Bradley prior art is not reasonably pertinent and is not analogous."

Id at 865.

In this case, Applicants submit that the *Winzer* reference is neither within the same field of the inventor's endeavor, nor is it reasonably pertinent to the particular problem with which the inventor was involved. Significantly, Applicants note that *Winzer* is clearly concerned with improving the coupling of the three optical fibers fe, fa, and fs. *Winzer* specifically requires these three optical fibers to form an ideal functioning device (See Column 2, lines 44 – Column 3, line 10, and each one of the claims). Additionally, the *Winzer* reference would lead to increases in device size and costs due to the extra optical fiber requirements and precision manufacturing requirements to enforce the aperture, diameter, and angle requirements, effects which are also taught away from on page 3 of Applicant's invention.

For at least these reasons, Applicants submit that *Winzer* is non-analogous art and should thus be withdrawn from consideration.

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Additionally, even if *Winzer* were considered to be analogous art, neither *Winzer* nor *Zhou* provides a teaching, suggestion, or motivation to combine. The Examiner states at the bottom of page 4 of the last Office Action that "The motivation [to combine] would be to reduces [six] or eliminate interference by light signal coming directly from the source, as the detector would only receive light signal from the optical fiber as intended." Applicants note that the Examiner has failed to provide any evidentiary support for this assertion, or cite to any portion of the references. Accordingly, Applicants respectfully request that the Examiner, in reply, provide support for this assertion so that Applicants may be given the opportunity to thoughtfully respond. Applicants submit that neither the *Zhou* nor the *Winzer* reference provide such a teaching, suggestion, or motivation, and in fact, the reference teach away from such a combination. Specifically, see Column 2, lines 42 – 46 of *Zhou*, which clearly discloses the disadvantages of using a cleaved optical fiber and clearly teaches away from such a structure.

Finally, even if *Winzer* and *Zhou* were combined, the result would be non-functional and fail to provide for the individual advantages espoused by each reference. Specifically, Applicants submit that there is simply no way to combine these reference to arrive at a functional device that operates within the bounds of each reference. For example, replacing the light emitting / reflecting / transmitting junction of *Zhou* with the coupler of *Winzer* would render the power monitor 103 of *Zhou* inoperable and would fail to provide the "accurate measure of the intensity of the emitted light" that *Zhou* is directed to providing (See Column 2, lines 50 – 53). Furthermore, eliminating the optical fibers fe and fa is clearly counseled against by *Winzer*, which teaches the advantages and optimum operating characteristics between the three optical fibers fe, fa, and fs.

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Accordingly, Applicants respectfully request that the Examiner, in reply, provide how one of ordinary skill in the art at the time of the invention would combine the disparate structures of *Zhou* and *Winzer* to arrive at a functional anticipatory device. Applicants submit that not only would one of ordinary skill in the art not have been motivated to make the combination, that one of ordinary skill of the art would not have been able to make such a combination and arrive at a functional device in line with the individual teachings and advantages of each reference.

Applicants note that the test for obviousness is not whether features of one reference may be bodily incorporated into another reference; rather, test is whether combined teachings render claimed subject matter obvious. *In re Wood* (1979, Cust & Pat App) 599 F2d 1032, 202 USPQ 171. Furthermore, "if references taken in combination would produce a 'seemingly inoperative device,' we have held that such references teach away from the combination and thus cannot serve as predicates for a *prima facie* case of obviousness." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir., 2001)

For at least the reasons set forth above, Applicants respectfully submit that claims 12 – 28 are in condition for allowance over the cited art of record.

In specific regard to claims 14 and 18, Applicants note that *Zhou* fails to teach a system including both a light source and a light detector, wherein the light detector is placed so that a normal line to its light receiving plane is perpendicular to an optical axis of the optical fiber 101 and the light source 102 is facing the inclined end face.

Specifically, Col. 7, lines 32 – 49 and Fig.'s 6A and 6B clearly disclose that this configuration is for a light reception node only. The remainder of the specification directed to a system including both a light source and a light detector fail to anticipate

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these claims, but rather always place the light detector 118 in the position shown in Fig. 7.

For at least this reason also, Applicants respectfully submit that claims 14 and 18 are in condition for allowance over the cited art of record.

In specific regard to claims 24 and 25, Applicants submit that *In re Kuhle* is not applicable to the facts here as *Winzer* clearly teaches that the optical fibers fe and fa are advantageous, and discloses the optimum relationships to provide the most ideal coupling between the three fibers. For this same reason, Applicants submit that one of ordinary skill in the art, in light of the *Winzer* reference, would not be motivated to simply "eliminate" the fibers fe and fa. The Examiner has failed to disclose any teaching or suggestion in *Zhou* that eliminating the fibers fe and fa would be advantageous. Rather, the *Zhou* reference simply does not address this issue. The fact that *Zhou* does not disclose the use of fibers fe and fa in the junction does not mean that it teaches their elimination.

For at least this reason also, Applicants respectfully submit that claims 24 and 25 are in condition for allowance over the cited art of record.

In specific regard to claims 26 and 27, Applicants note that the definition of the term bisect means to "to cut or divide into two equal or nearly equal parts." (*Random House Unabridged Dictionary*, Random House, Inc. 2006). Applicants submit that the *Winzer* reference fails to disclose that the core portion of the fiber (ds) is bisected by the angled portion. Rather, and as clearly disclosed in FIGURE, the *Winzer* reference fails to disclose an equal bisection of core by the angled and non-angled portions.

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For at least this reason also, Applicants respectfully submit that claims 26 and 27 are in condition for allowance over the cited art of record.

The Examiner's remaining references cited but not relied upon, considered either alone or in combination, also fail to teach applicant's currently claimed invention. In light of the foregoing, Applicants respectfully submit that all claims now stand in condition for allowance.

Respectfully submitted,

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